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MMT
(Manual Muscle Testing)

MMT is the most important part of physical examination in physiotherapy. It helps in differential diagnosis prognosis & Treatment of various neuronmuscular and musculoskeletal disorder. It is discorder by L. Daniales and C. Worthington.

This consist of test performing and evaluation of muscle strength.

- Grading :- There are two scales which is used to evaluate the strength or weakness of the muscle.

① Oxford Scale :-

0 - No Contraction
1 - Flicker Contraction
2 - Gravity Eliminating movement
3 - Against Gravity movement
4 - Against Gravity moderate resistance.
5 - Against Maximum resistance.

② Lovett Scale :- ① Gone :- No Contraction felt.
② Trace :- Muscle can be felt tight, But can not produce movement.
③ Poor :- Produce movement with gravity less But cannot function against gravity.
④ Fair :- Can raise part against gravity.
⑤ Good :- Can raise part against out side resistant as well as against gravity.

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(5) Normal :- Can overcome greater amount of resistance than a good muscle.

- **Principle :-** There are certain basic component of muscle testing which are used regularly in the testing of individual muscle.

(1) Position :- It is the test indicate the position in which subject is placed in order to carry out the test is best possible way.

(2) Fixation stablisation :- It is necessary to the part which are stationary and are usually the site of origin of muscle.

(3) Test :- This term is used to the completed test position or to the test movement. Test in the test mean the action of the muscle which has to be perform by the subject for its testing

(4) Resistance :- Presure or resistance is used to denote extemal force applied by the examination after complication of the test to know the strength of the muscle holding to test position.

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CLASSIFICATION OF MOVEMENT OR EXCERCISE

- Introduction :- The exercise is needed for the treatment purpose is called as therapeutic exercise of movement.

* The person perform the exercise in Gym and jogging for healthy living But the therapeutic exercise is are the exercises which are perform to come out from one allignment or desease.

* The main goal of therapeutic exercise is making the patient independent or Symptoms free movement.

- Classification :- There are two types of movement –

Active movement
(1) Free
(2) Assisted
(3) Assisted Resisted
(4) Resisted

Passive movement
(1) Relaxed P.M
(2) Mobilization
(3) manipulation
(4) Stretching

Active movement :- The movement which is done by the patient himself is said to be active movement. Active movement are the voluntory action of the muscle.

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(1) Free excercise :- These are the exercises which are perform by the patient himself without any assistant and resistance by the external force. There will be not be any of the manual or mechanical assistance or resistance giving in this type of exercise.

There are two type of free exercise –
(1) Localise (2) Generalise

Localise :- The localise free exercise are planed and form to perform one perticular joint range or to increase the strength power and endurance of one group of perticular muscles.

Generalise :- Generalise free exercise type of free exercise are forms to increase the joint range in multijoint or to increase the strength of many group or the total body muscle.

Uses :- ① Increase the joint range.
② Increase the muscle strength ~~(2)~~ Power & endurance.
③ Increases the neuromuscular coordination
④ Increases the circulation & venous drainage.

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5. Increases the relaxation of muscle
6. Prevent ~~xxxx~~ Soft tissue stiffness for break the adhesion formation.
7. To promote the Cardiyorespiratory function
8.

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PASSIVE MOVEMENT

The passive movement which is perfomed with the help of the external force whenever the muscles failed to pefom the movement by its own.

* Passive movement are those movement which are perfomed by the therapist or by any external force incomplete relaxed position.

* This extrnal force may be applied by the Therapist by the gravity, by machiene and another part of the individual body

- Types of Passive movement
<1> Relaxed passive
<2> Strtching of soft tissue
<3> Mobilisation
<4> Manupulation

<1> Relaxed Passive :- This is smoth Rythemic and accurate anatomical movement perfomed by the therapist within the pain limiting range.

- Principle :- <1> Relaxation :- Patient has to be in position in relaxe manner before starting the treadment procedure

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During the relaxed state their will not be any muscle work & be total body part will be to fully relaxed.

The therapist position also play an important role to treat the patient

The therapist has to mostly adopt the walk standing position while treating the patient.

<2> Fixation :- The proximal Joint to the Joint to be move fixed or Stablised.

<3> Range :- The movement perform pain limited rang. In that Joint Care must be taken to avoid the movement exceeding the anatomical movement in the stiff Joint.

<4> Traction :- The long axis Traction giving to increase the space between articular surface. It reduce the intraarticular friction.

<5> Speed & duration :- Speed should be should Rhythmic Smooth & Same Speed be maintain throughout the movement, there should not be Jercky movement.

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Indications of Relaxed Passive movement

(1) Flacid paralysis (2) Patient in complete bedrest
(2) Patient in comma.
(4) Active movement is painful
(5) when inflamatory reaction are present

Effect and uses

(1) To maintain free range of motion
(2) To increase blood circulation
(3) Prevent adhesion fomation
(4) Prevent muscle contracture
(5) To maintain mechanicle elasticity of muscle
(6) To decrease pain
(7) Provide nutrition to cartilage
(8) It assist healing process following injury or surgery
(9) Bone deminiralisation.
(10) Prevent DBT
(11) Increase venous & lymphatic drainage
(12) Induses the relaxation.

Contraindication.

(1) Recent fracture
(2) Recent dislocation
(3) Malignat Tumous (4) Sorreasis (5) Artharitis.
(6) Hemarthrosis (7) Burn (8) Heamophilic Joint
(9) with external implant (10) with POP
(11) Immediatly after any Joint Surgery or repair.

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STRETCHING
[elongation of muscle fibre]

It is the elongation of the pathalogical shorten or tighten of soft tissues with the help of some therapeutic technique.

* Stretching restores flexiblity to muscle that are not used for a long time

* Types of stretching
<1> Self stretching
<2> Passive stretching
(3) PNF - (Proprioceptive Nerve facilitation)

◉ Self stretching :- The patient himsef does this stretching programme. This type of exercise showing early improvement in peforming stretching with the guidline of the therapist improves the neuromascular facilitation and relax the muscle.

◉ Passive strecthing :- (Relax passive streching) Passive stretching is also referred as relax stretching and static passive stretching.

* It is a stretch in which a person assumes a position and holds it with the help of some part of body or with the therapist.

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* Thus the force for the stretch is provided by another body part or physiotherapist or a device.

*. It is by manual & machanical both.

* Indications :- <1> Post traumatic stiffeness
<2> Post immobalisation stiffeness.
<3> Ristrictive mobility
<4> Congenital (by birth) or aquired bony deformity.
<5> Joint pathology. Resulting in soft tissues
<6> Stifness.
<6> Healed burned scar
<7> Fear of pain spasm.
<8> Adhesion formation over soft tissue.
<9> Contracture of the joint & soft tissue.
(10) Any type of muscular spasm.
(11) Spastisity [Upper motor Neuron Leison (UMN)]

Contraindication :- <1> Synovial effusion
<2> Recent fracture.
<3> Sharp pain <4> Inflamation in the tight tissue <5> Infection (6) dislocation.
(7) Subfaxation. (8) Osteochrosis (9) Oedema.
(10) Heamophilic Jt (11) Melegnant Tumor
(12) after Joint arthroplasty (13) Neuropathic Jt.
(13) Unheald scar. (14) Unhealed burn
(15) Chronic limited Arthritis (16) Osteoartharistis
(17) Metal Retarded patient.

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Principle :- - Patient Position - Stablisation fixation, Pressure, frequency.

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